Christos Vlachos. *Wh-constructions and The Division of Labour Between Syntax and The Interfaces.* University of Patras, 2012.
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1. Introduction

Largely couched within the minimalist framework (Chomsky 1995, et seq.), this dissertation investigates the mapping between syntax and semantics, in the context of two types of (Modern Greek) wh-constructions, i.e., questions and sluicing. As presently understood, wh-constructions are sentences that feature a wh-word or phrase, such as *pjos* ('who') or *pjo* ('which') + NP, etc. Questions are fully fleshed-out wh-constructions that may come with either a fronting version, as in (1), or an in situ version, as in (2):

- (1) *Pjon sinantise i Anna?*
who-ACC met-3SG the Anna-NOM
"Who did Anna meet?"

- (2) *I Anna sinantise pjon?*
the Anna-NOM met-3SG who-ACC
"Anna met who?"

Sluicing represents elliptical wh-constructions, which seem to attest the in situ version of (2), as in (3), yet they yield a meaning that resembles the fully articulated, fronting version of (1), as in (4):

- (3) *I Anna sinantise kapjon ala dhen ipe pjon*
the Anna-Nom met-3SG someone-ACC but NEG say-3SG who-ACC
"Anna met someone, but she didn't say who."

- (4) *I Anna sinantise kapjon ala dhen ipe pjon sinantise*
the Anna-NOM met-3SG someone-ACC but NEG say who-ACC met-3SG
"Anna met someone, but she didn't say who she met."

From a theoretical standpoint, a fundamental assumption of the minimalist framework is that each syntactic structure corresponds to two representations, at the phonological (PF) and the semantics (LF) interface respectively. So, the two interfaces, which do not interact with each other, decode the output of

syntax. Within this framework, we may expect that the mapping from syntax to semantics is 1:1, in that each structure is associated with one meaning. If so, then the syntax-semantics mapping is transparent. Concentrating on (Modern Greek) *wh*-questions and sluicing, this dissertation shows that, in the case of *wh*-questions, either a fronting (cf., (1)) or an *in situ* (cf., (2)) structure may each yield two meanings, while, with regard to sluicing (cf. (3)), the relevant structure is virtually “less” than the corresponding meaning (cf., (4)). Given this empirical evidence, it is argued that the association between syntax and semantics may not always be transparent, i.e. for the data under consideration, there is certain semantic information that is not registered in the syntactic structure or, in other words, is “missing”, so to speak. This “missing” information is directly supplied by the interfaces. Specifically, for *wh*-questions, the disambiguation of meaning happens at PF, while for sluicing, the recovery of meaning occurs at LF. And given that PF contributes to meaning (concerning *wh*-questions), the two interfaces “see” each other.

The dissertation consists of 6 chapters and gives equal attention to the topics under discussion. More precisely, Chapters 2 and 3 consider *wh*-questions, Chapters 4 and 5 concentrate on sluicing, and Chapters 1 and 6 introduce and conclude the relevant issues respectively. A summary of the discussion is provided below.

2. The Study

It is generally assumed that the fronted version in (1) corresponds to a “true question”, where the speaker requires a value for the *wh*-pronoun, seeking new information. Yet, the *in situ* version in (2) has an “echo-reading”, where the speaker asks for a confirmation of something that has been already said. In this sense, the syntax-semantics mapping is 1:1, i.e., *wh*-fronting: true question vs. *wh*-*in situ*: echo question. In principle, Chapter 2 shows that, given the proper intonation, *wh*-fronting may correspond to either a true or an echo question, and the same is true with *in situ* structures. So, the relevant pattern of mapping does not appear to be 1:1. Furthermore, this Chapter compares fronting and *in situ wh*-questions in terms of distribution, interpretation and intonation. As regards distribution, either true or echo, *wh*-fronting exhibits blocking-effects (islands), while *wh*-*in situ* does not. Concerning true-question interpretation, *wh*-fronting has “non-exhaustive quantification”, that is, the *wh*-variable may draw from an infinite set of possible values, while *wh*-*in situ* has “exhaustive quantification”, meaning that the *wh*-variable may draw from a finite set of possible values. With respect to echo-question interpretation, both fronting and *in situ* correspond to an “individual reading”, in the sense that the *wh*-variable may only get a value that is already given in the immediate linguistic environment.

Now, if “quantification” denotes a “set of values”, then *wh*-echoes, unlike ordinary *wh*-questions, have no quantification. When it comes to intonation, true and echo-questions have a dedicated prosody, which is L^*+H (or H^*) $L-!H\%$ for true-questions, and $L^* L- H\%$ for echo-questions. And, while the relevant true and echo melodies spread over the whole utterance, in the case of *wh*-fronting, the corresponding true and echo melodies concentrate on the *wh*-pronoun, in the case of *in situ*. In the interest of clarity, the relevant prosodies have been examined under an experiment that emulated the natural (speech) production of the configurations under consideration, in laboratory conditions. The description of the spoken data has been implemented through the PRAAT program for speech analysis and synthesis, while GrToBI (i.e., Greek ToBI), as has been modified by Arvaniti and Baltazani (2005), has been used for the annotation of the intonation contours.

In the light of the above empirical findings, Chapter 3 is concerned with two questions, namely, how *wh*-fronting and *wh*-*in situ* structures are generated, and how true and echo readings are disambiguated. Starting with the former, the general consensus regarding the formation of *wh*-questions is that a broad *wh*-parameter determines that a language features either fronting (English, Modern Greek), or *in situ* (Chinese, Japanese), but not both. In the context of the minimalist framework, this parameter boils down to a generalized “EPP-instruction”, whose presence induces displacement of the *wh*-pronoun (English, Modern Greek), while its absence does not (Chinese, Japanese). Displacement is what constitutes instances of “movement”, and in this sense, *wh*-fronting assumes “movement”, while *wh*-*in situ* does not. Now, considering (1) and (2) above, typical *wh*-fronting languages may also exhibit *wh*-*in situ* questions (and a similar situation seems to hold in the case of typical *wh*-*in situ* languages; see, e.g., Cheng 1991). Three major approaches to such *wh*-*in situ* alternatives assume some version of “movement”, namely either covert, or feature, or remnant movement. Contrary to this set of assumptions, the system developed in order to account for the Modern Greek data treats fronting and *in situ* structures without resorting to “movement”. More precisely, the assumption is that the generalized “EPP-instruction” is not associated with displacement (“movement”), but with lexicalization, which, in turn, does not rely on “movement”. From this perspective, nothing in principle may prohibit the lexicalization of two distinct, yet chain-related, positions in a *wh*-structure. Therefore, if the “operator” position is lexicalized, *wh*-fronting surfaces, while if the position of the “variable” is lexicalized, *wh*-*in situ* surfaces.

Issues involving blocking-effects (islands) and (*wh*-)parameterization are relevant, at this point. The proposed system challenges the conventional logic that underlies both phenomena. Specifically, it is maintained that blocking-effects may be exponents of processing/parsing restrictions that operate out-

side (narrow) syntax (e.g., Hofmeister & Sag 2010). With regard to (wh-)parameterization, it is argued that so-called typical fronting languages (English, Modern Greek) and in situ ones (Chinese, Japanese) may feature the same lexicalization possibilities. What appears to distinguish them is the way the “variant” (i.e., language-specific) substantive lexicons (wh-elements) partition the “invariant” (i.e., language-independent) clause-structure.

Clearly, if the above reasoning is on the right track, the question remains as to how true and echo readings are disambiguated. Against treatments that attribute the status of morphosyntactic features to primitives of intonation, and hence compute the relevant readings inside syntax, the proposal, maintained and developed further, is that the relevant disambiguation takes place at PF, via intonation; hence outside syntax (Rousou, Vlachos & Papazachariou 2013). This idea brings together the intonation and interpretational facts of Chapter 2, under a system of formal mapping between prosody and semantics. The system is largely based on Vergnaud and Zubizarreta’s (2005) relevant system of mapping, and extends it to echo questions. In particular, there are two distinct melodies (as discussed previously), one yielding the semantics of “true” question, and the other that of “echo” question. Differences in meaning, regarding true questions, are due to the way the relevant prosody falls on the utterance (i.e., wh-fronting maps to a spreading melody, while wh-in situ to a concentrated one) and to the way this affects semantics. The lack of differences in meaning, concerning echo questions, either fronting or in situ, is due to the relevant prosody, and to its corresponding impact on semantics. In short, the division of labor between syntax and the interfaces is such that syntax records some aspects of the semantics of wh-questions, while other aspects are computed at the interaction between PF and LF.

Issues concerning the “fronting vs. in situ” debate, as well as, the separation of tasks between syntax and the interfaces reappear in the context of sluicing, namely elliptical wh-constructions, where, roughly speaking, the “observable” syntax is “less” than the “available” meaning (cf., (3) and (4)). Chapter 4 provides a number of empirical evidence, related to both distribution and interpretation, which shows that sluicing does not attest all the properties that are available to fully fleshed-out wh-questions. Regarding distribution, sluicing, unlike its wh-counterparts, does not obey islands, and while a phenomenon coined “Preposition Stranding” is not allowed in Modern Greek wh-questions, it is attested in sluicing. In terms of interpretation, the reading of the wh-pronoun in sluicing, unlike that of the wh-pronoun in wh-questions, is restricted to “variable-related” contexts, and does not extend to “predicate-related” ones. The discussion in this Chapter ends with a review of two mutually exclusive approaches to sluicing. One approach espouses a “fronting” view, according to which there is additional syntax that is not phonologically present (e.g., Chung, Ladusaw

& McCloskey 1995, Merchant 2000, 2001). So, although there is a mismatch between what the phonological and semantics interfaces see, and what syntax makes available, the assumption is that syntax maps to semantics transparently. The other approach endorses an “in situ” reasoning, which states that there is no additional syntax, apart from the one that “surfaces” (e.g., van Riemsdijk 1978, Culicover & Jackendoff 2005). Noteworthy, the “fronting” approach offers a number of empirical arguments against the “in situ” view. The allegedly most severe arguments are those regarding complement selection, case, extraposition, subject-agreement, and positional distribution in languages like German and Dutch. Other than that, a shared intuition among both lines of theorizing is that sluicing amounts to an “anaphoric” construction, yet differently captured.

In light of the above discussion, Chapter 5 begins by offering a comparison between sluicing and other types of anaphora, viewed against a pattern of anaphoric dependence. The comparison proves, on independent grounds, that sluicing is an intrinsically anaphoric construction. These findings are coupled with those of Chapter 4, which show that sluicing, albeit yielding the reading of a *wh*-question, does not structurally amount to a full-blown *wh*-question. The analysis that this chapter lays out is syntactically oriented, and reconciles the interrogative properties of the *wh*-pronoun with its anaphoric status. Specifically, as a first step of the argument, it is maintained that the internal structure of Modern Greek *wh*-pronouns, like *pjon* (‘who’), assumes a *wh*-part, which lexicalizes information related to quantification, and a pronominal part, which specifies agreement features and case. In this context, it is proposed that the “*wh*-question” interpretation is a function of the *wh*-pronoun (i.e., its *wh*-part) and the predicate that selects for it, while the “anaphoric” interpretation is a function between the *wh*-pronoun (i.e., its pronominal part) and a relevant term in the available linguistic environment. Perhaps, an example, as in (5) below, may be demonstrative.

- (5) I Anna sinantise kapjon ala ðen rotisa pjon
 the Anna-Nom met-3SG someone-ACC but NEG asked-3SG who-ACC

“Anna met someone, but she didn’t say who.”

The association between *rotisa* (‘asked’), which is a predicate that selects for interrogative complements, and the *wh*-part of *pjon* (‘who’) yields the expected *wh*-question reading, while the association between *kapjon* (‘someone’) and the pronominal part of *pjon* (‘who’) gives rise to the anaphoric reading. In the latter case, the agreement features of the two participants of anaphora (i.e., *kapjon* (‘someone’) and *pjon* (‘who’)) match, as is the case with anaphora, in general. This matching includes case-features, on the assumption that case is not a “reflex” of an underlying syntactic process (i.e., abstract Case) that relies

upon some sort of (functional) “licensing”, but an inflectional morpheme that has a particular interpretational import, just like other inflectional features. There is then a “dual”, so to speak, dependency (local and non-local) that regulates both the syntax and semantics of a sluicing construction. In terms of syntax, there is no other structure apart from the one that “surfaces”. With regard to semantics, the relevant interface computes the “wh-question” reading of the pronoun, and contributes the necessary “missing” information, via the anaphoric function. So, as in (5), *pjon* (‘who’) is not just any person, but the person that Anna met. Thus, despite the “condensed” form of the syntactic output, LF reads-off this form as if a full-blown structure is available; hence, the effect of “ellipsis”. The technical aspects of the analysis are these developed in Chapter 3 concerning the formation and interpretation of typical wh-questions (mentioned previously). And the arguments, presented in Chapter 4, that have traditionally been taken to stand against the offered analysis of sluicing are examined from a fresh perspective, which is consistent with both the analysis in question, and the minimalist framework adopted.

3. Conclusion

Some of the main empirical and theoretical arguments offered in the dissertation (all of them put together in Chapter 6) can be summarized as follows. From the empirical standpoint, considerable data regarding the distribution, interpretation and intonation of Modern Greek wh-questions and sluicing, not previously discussed, are presented here and combined. These empirical facts support the following theoretical argument of the present study: the syntax of the relevant wh-constructions encodes certain aspects of their semantics, while other aspects are supplied by the phonological interface (PF), in the case of questions, and by the semantics interface (LF), in the case of sluicing. Therefore, both interfaces can compute additional information that is not encoded in the syntactic structure. This means, in turn, that the syntax-semantics mapping is not always transparent, and since phonology contributes to semantics, then the two interfaces talk to each other. In more general terms, syntactic structures are the exponents of form-meaning associations (Chomsky 2000), but not (or, at least, do not have to be) the exclusive determinants of these associations, on the assumption that the interfaces may communicate and contribute to the pairing of form with meaning. An implication of the present work, which is tentatively articulated, given that it requires extensive elaboration in order to be considered seriously, may be the following: if the line of theorizing in the present dissertation is correct, then it may be the case that divergence from the (perhaps) “ideal” scenario of the transparent syntax-semantics mapping is, in fact, the “ideal” scenario, once the role of the interfaces in the externalization of linguistic structures is put into perspective.

References

- Arvaniti, Amalia and Mary Baltazani. 2005. Intonational analysis and prosodic annotation of Greek spoken corpora. In Sun-Ah Jun, (Ed.), *Prosodic Typology: The Phonology of Intonation and Phrasing*, 84–117. Oxford: Oxford University Press.
- Cheng, L.L.-S. 1991. On the Typology of Wh-questions. Doctoral dissertation, MIT.
- Chomsky, Noam. 1995. *The Minimalist Program*. Cambridge, MA: MIT Press.
- Chomsky, Noam. 2000. Minimalist inquiries, the framework. In R. Martin, David Michaels, and Juan Uriagereka, (Eds.), *Step by Step: Essays on Minimalist Syntax in Honor of Howard Lasnik*, 89–156. Cambridge, MA: MIT Press.
- Chung, Sandra, William A. Ladusaw, and James McCloskey. 1995. Sluicing and Logical Form. *Natural Language and Linguistic Theory* 3: 239–282.
- Culicover, Peter W. and Ray Jackendoff. 2005. *Simpler Syntax*. Oxford: Oxford University Press.
- Hofmeister, P. and Ivan A. Sag. 2010. Cognitive constraints and island effects. *Language* 86: 366–415.
- Merchant, Jason. 2000. Islands and LF-movement in Greek sluicing. *Journal of Greek Linguistics* 1: 41–64.
- Merchant, Jason. 2001. *The Syntax of Silence: Sluicing, Islands, and the Theory of Ellipsis*. Oxford: Oxford University Press.
- Van Riemsdijk, Henk. C. 1978. *A Case Study in Syntactic Markedness*. Lisse: The Peter De Ridder Press.
- Roussou, Anna, Christos Vlachos, and Dimitrios Papazachariou. 2013. In-situ, ex-situ and (non)echo questions. To appear in *Proceedings of the 20th International Symposium on Theoretical and Applied Linguistics*.
- Vergnaud, Jean-Roger and M-L. Zubizarreta. 2005. The representation of focus and its implications: towards an alternative account of some ‘intervention effects.’ In H. Boekhuis, N. Corver, R. Huybregts, U. Kleinhenz, and Jan Koster, (Eds.), *Organizing Grammar. Studies in Honour of Henk van Riemsdijk*, 641–678. Paris: Mouton De Gruyter.